

REMARKS

The Applicants thank the Examiner for the thorough consideration given the present application. Withdrawn claims 1, 3-5, 7-15, 18-26, 29-37, and 40-49 were previously canceled without prejudice to or disclaimer of the subject matter contained therein. Claims 2, 6, 16, 17, 27, 28, 38, 39, and 50-55 are pending. Claims 2, 16, and 28 are amended. The Examiner is respectfully requested to reconsider the rejections in view of the amendments and remarks set forth herein.

Examiner Interview

The Applicants appreciate the courtesies extended by Examiner Nhan T. Tran to Applicants' representative, Carl T. Thomsen, Registration No. 50,786, during the interview conducted on July 5, 2006. The Examiner will note that further arguments are presented herein to more fully describe the distinguishing aspects of the inventions set forth in independent claims 2, 6, 16, 27, 38, 54, and 55 of the present invention as compared with that which is disclosed in the references cited by the Examiner. During the further examination of this Amendment, the Applicants respectfully request that the Examiner grant another interview with Applicants' representative Carl T. Thomsen to discuss these distinguishing aspects of the present invention. Carl T. Thomsen is available at 703-208-4030 (direct line) for an interview at the Examiner's convenience.

Claim Objection

The Examiner has objected to claim 2 alleging that a semicolon is missing. In response to the Examiner's objection, claim 2 has been amended.

Rejection Under 35 U.S.C. § 112, second paragraph

Claims 16, 17, and 28 stand rejected under 35 U.S.C. § 112, second paragraph. This rejection is respectfully traversed.

In order to overcome this rejection, the Applicants have amended claims 16 and 28 to address each of the issues pointed out by the Examiner. The Applicants respectfully submit that the claims, as amended, particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Rejection Under 35 U.S.C. § 102(b)

Claims 16 and 17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Takahashi et al. (U.S. 5,831,676). This rejection is respectfully traversed.

The Applicants respectfully submit that independent claim 16 as currently written is not disclosed by Takahashi et al.

Takahashi et al.

The Applicants submit that the Examiner's indication that "area A in Fig. 9 of Takahashi et al. corresponds to aperture for a normal shooting mode and this is clearly seen

from Fig. 9 where the aperture F1.4 is little out of the normal aperture range for area A” is not proper.

Area A in Fig. 9 of Takahashi et al. is different from normal use area of the present invention in the following points. Takahashi et al. does not disclose the idea of using an aperture out of the aperture range for normal shooting and the use of aperture out of the aperture range for the normal shooting for automatic exposure photometry or video signals of auto focus.

In Fig. 9 of Takahashi et al., the abscissa indicates the illumination intensity of object constituting the input parameter, while the ordinate indicates the set values of the control parameters (P1:IRIS, P2:SHUTTER, P3:GAIN). As will be apparent from Fig. 9, the set range of each parameter is divided into three areas A, B, C according to the input parameter or the illumination intensity, and the exposure control is achieved by the combination of three parameters in each area.

In each area, reduction of the amount of calculation is performed by varying only one parameter and fixing other parameters.

For example, in the area A, the shutter speed (P2) is fixed at 1/100 sec., while the gain (P3) is also fixed, and the exposure control is achieved by controlling the iris aperture (P1) according to the illumination intensity. Meanwhile, the area B corresponds to a state in which the iris is fully opened because of the low illumination intensity, so that the iris aperture is fixed at the largest aperture. The exposure control is therefore conducted by varying the shutter speed to 1/60 sec.

LIMIT AREA B1 is a boundary region, in which parameters P1 and P2 are varied simultaneously.

Two parameters of the adjacent areas are simultaneously varied in the vicinity of the boundary of said areas.

As above, Takahashi et al. distributes a program diagram into multiple areas according to the illumination intensity of object, but the contents are that the exposure control is achieved by the combination of three parameters in each area. That is, according to the illumination intensity of the abscissa, the control is achieved over three areas of A, B and C.

As is clear from indicating "boundary region B1 and B2" in Description of the Drawings, LIMIT AREA B1 and B2 of Fig. 9 discloses a boundary in which fixed parameters are switched, and does not disclose LIMIT of normal use area.

Therefore aperture control is achieved continuously according to the illumination intensity from open to small aperture (in case of Fig. 9, from F1.4 to F16). Both F1.4 and F16 are normal use area.

In contrast, as shown in Fig. 8, the present invention discloses the use of F2.8 to F8 for normal shooting, not F1.4 to F2.7. That is, this present invention is not achieved continuously according to the illumination intensity.

At least for the reasons explained above, the Applicants respectfully submit that the combination of features set forth in independent claim 16 is not disclosed or made obvious by the prior art of record, including Takahashi et al.

Therefore, independent claim 16 is in condition is in condition for allowance.

Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. §102(b) are respectfully requested.

Rejections Under 35 U.S.C. § 103(a)

Claims 2, 6, 50, 51, 54, and 55 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takahashi et al. in view of Saruwatari (U.S. 6,727,949); and

claims 52 and 53 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takahashi et al. in view of Saruwatari and in further in view of Kondo (U.S. 5,585,942).

These rejections are respectfully traversed.

The Applicants respectfully submit that each of independent claims 2, 6, 54, and 55 as currently written is not disclosed by the combination of Takahashi et al. and Saruwatari et al.

Takahashi et al.

Arguments regarding Takahashi et al. are presented above, and thus, are not repeated here.

Saruwatari et al.

The Applicants respectfully submit that OPEN IRIS in Fig. 11 of Saruwatari et al. is different from normal use area of the present invention in the following points. Saruwatari et al. does not disclose the idea of using an aperture out of the aperture range for normal shooting and the use of aperture out of the aperture range for the normal shooting for automatic exposure photometry or video signals of auto focus.

As indicated in the description of Fig. 11, OPEN IRIS of S402 is only set in the position of a full open aperture, and is not out of the aperture range for normal shooting, as set forth in the present invention.

As shown in S114 and S118 of Fig. 8, the present invention is achieved by an aperture of over F1.4 to less F2.8 for AF, and by an aperture of over F2.8 to less F8 for shooting. That is, the present invention distributes the range aperture range for AF and that for shooting definitely. On the other hand, Saruwatari et al. does not distribute in this way. In fact, there is no indication in S402 of Fig. 11 that OPEN IRIS is set in the position of out the aperture range. Also as RETURN TO APPOSITE APERTURE VALUE of S407 is set in the position of the appropriated aperture, if the illumination intensity is low, it is clear to become an open aperture same as S402.

In view of the above, it is apparent that Saruwatari et al. cannot make up for the deficiencies of Takahashi et al. to reject independent claims 2, 6, 54, and 55.

At least for the reasons explained above, the Applicants respectfully submit that the combination of features set forth in each of independent claims 2, 6, 54, and 55 is not disclosed or made obvious by the prior art of record, including Takahashi et al. and Saruwatari et al.

Therefore, independent claims 2, 6, 54, and 55 are now in condition for allowance.

Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a) are respectfully requested.

Rejections Under 35 U.S.C. § 103(a)

Claims 27, 28, 38, and 39 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Takahashi et al. in view of Saruwatari et al., and in further in view of Norita et al. (U.S.6,906,751). This rejection is respectfully traversed.

Arguments Regarding Independent Claims 27 and 38

Each of independent claims 27 and 38 as currently written recites a combination of elements for controlling an aperture of a camera, including *inter alia* “the controlling device capable of setting the aperture out of the aperture range for the normal shooting when shooting in a low-resolution mode”.

As discussed above, the Applicants submit that the Examiner wrongly concludes that area A in FIG. 9 of Takahashi et al. corresponds to the “normal shooting” range of the present invention, and that areas B and C correspond to the “aperture out of an aperture range for normal shooting” of the present invention.

Further, as conceded by the Examiner on page 9 of the Office Action, Takahashi et al. and Saruwatari et al. do not clearly disclose that the auto focus is performed in a low-resolution mode.

Regarding the Norita et al. document, the Examiner refers to FIG. 26-28 and column 19, lines 10-62, and column 1, lines 52-59. As best understood by the Applicants, the Norita et al. document merely discloses a method for improving an auto focus operation.

However, the Norita et al. document lacks any teaching of “setting the aperture out of the aperture range for the normal shooting when shooting in a low-resolution mode”.

Further, since claims 27 and 38 are directed to “setting the aperture out of the aperture range for the normal shooting when shooting in a low-resolution mode”, whereas Norita et al. is merely directed to improving an auto focus operation, there would be no motivation for one skilled in the art at the time the invention was made to combine Norita et al. with the other references cited by the Examiner.

In summary, none of the references teaches using different aperture ranges when shooting in a low-resolution mode.

Thus, no combination of Saruwatari et al. and Norita et al. can make up for the deficiencies of Takahashi et al.

At least for the reasons explained above, the Applicants respectfully submit that the combination of elements set forth in each of independent claims 27 and 38 as currently is not disclosed or made obvious by the prior art of record, including Takahashi et al., Saruwatari et al., and Norita et al.

Accordingly, each of independent claims 27 and 38 as currently written are in condition for allowance.

Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) is respectfully requested.

Dependent Claims

All dependent claims are in condition for allowance due to their dependency from allowable independent claims, or due to the additional novel features set forth therein.

All claims of the present application are now in condition for allowance.

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Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. §102(b) and §103(a) are respectfully requested.

CONCLUSION

Since the remaining patents cited by the Examiner have not been utilized to reject claims, but merely to show the state of the art, no comment need be made with respect thereto.

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, he is invited to telephone Carl T. Thomsen (Reg. No. 50,786) at (703) 205-8000.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

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Respectfully submitted,

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